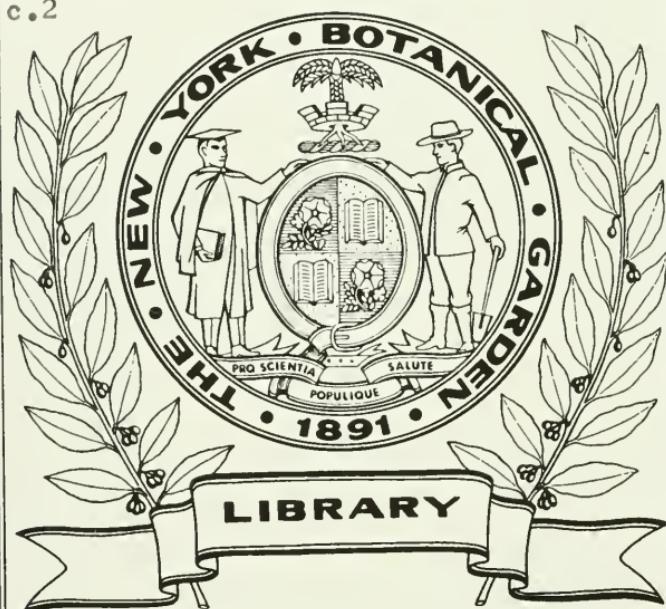


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Cocks, Reginald Somers

The Flora of the Gulf Biologic
Station

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GULF BIOLOGIC STATION

CAMERON, LA.

BULLETIN No. 7

THE FLORA OF THE GULF BIOLOGIC STATION

BY

R. S. COOCKS, M. A.

ISSUED BY THE

LOUISIANA STATE BOARD OF AGRICULTURE AND IMMIGRATION

CHAS. SCHULER, Commissioner



GULF BIOLOGIC STATION

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41

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BATON ROUGE:

THE DAILY STATE, OFFICIAL JOURNAL OF LOUISIANA.
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GULF BIOLOGIC STATION

CAMERON, LA.

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THE FLORA OF THE GULF BIOLOGIC STATION.

This paper has two objects; first, to give as complete a catalogue as possible of all the plants growing in the vicinity of the Gulf Biologic Station; and second, to record certain observations upon the Flora of Southwest Louisiana, more particularly the parishes of Calcasien and Cameron, made during the summer of 1906.

In the early part of the summer of 1903, when the Biologic Station was opened, the writer visited the station for two or three days and made a preliminary catalogue of the plants there collected, which was published in bulletin No. 2 of the Gulf Biologic Station. In the early autumn of 1906, thanks to the liberality of the Board of Directors of the station, the writer was enabled to revisit the station for a longer period, and to extend his observations into the adjoining parishes. As a result of this second visit, the number of plants recorded around the station was increased nearly fifty per cent. This large increase in the number of plants listed, together with the fact that there were several errors of determination in the first catalogue, decided the writer not to publish this second collection as a supplement, but to republish the catalogue as a whole, with brief notes on the distribution and other points of interest in the species mentioned. Great pains have been taken to make this list as accurate as possible, and to that end every plant of which there could be the slightest doubt was sent to one or more of the large herbariums in the country to be authenticated. In this connection the writer desires to express his most grateful thanks to Dr. B. L. Robinson and Prof. H. H. Bartlet of Harvard University, who have examined very many specimens for him; to Dr. A. S. Hitchcock of the Agrostology Department of the Bureau of Plant Industry at Washington, who has examined almost all the grasses collected; to Dr. E. L. Greene of the United States National Museum; to Prof. J. B. S. Norton of the Maryland Col-

lege of Agriculture, who has determined most of the species of Euphorbia; to Prof. S. M. Tracy of Biloxi, Miss., Special Agent of the Bureau of Plant Industry, who very kindly sent the writer a list of the plants collected by him at the station in 1903, and almost a complete set of the specimens, including several overlooked by the writer; and to Prof. A. G. Merrill of Rockland, Maine, who examined the lichens collected. Last but not least, the writer wishes to tender his hearty thanks to Prof. B. H. Guilbeau, the energetic director of the station, for every kindness, courtesy and assistancee.

As this catalogue is intended mainly for the help of students in the summer schools held at the station, a word should be said about the books consulted in the preparation of this paper. Of the two manuals of the Flora of the Southern States, Chapman's and Small's, Chapman's, the third edition of which was published in 1897, does not profess to include Louisiana, and though useful in some parts of the State, contains descriptions of comparatively few of the plants of Western Louisiana. Prof. Small's Flora was published in 1903, and is intended to include Louisiana. This is a magnifieent work, and contains accurate descriptions of nearly all the plants of this region, but from a Louisiana point of view is extremely deficient in plant distribution. In fact this book, which is the latest and most complete publication of the Flora of the Southern States, proves unmistakably that Louisiana is, from a phytogeographical point of view, almost an unknown country. Other books of use for this region are: Wood's Class Book of Botany, which professedly includes Louisiana and contains notes on many Louisiana plants; for while Wood was at work on the book, Dr. Hale of Alexandria sent him many plants from his neighborhood; Coulter's Flora of West Texas, which covers this region fairly well; Britton and Brown's Illustrated Flora; Britton's Flora of Northern United States; and Gray's Synoptical Flora. Other books consulted on various points were: Beale's Manual of North American Grasses; Mohr's Flora of Alabama; and the various publications of the Department of Agrostology at Washington.

In view of the fact that the writer has made the statement that Louisiana is more or less unknown botanically, a word

should be said by way of apology to the various botanists who have worked in Louisiana from time to time in the past. It is not intended to give an exhaustive list of every worker, but to refer only to the work of the most prominent. These are: Riddell, Hale and Carpenter, who worked in collusion from about 1839 to 1859; Prof. Featherman, 1869 to 1875; Dr. Joor, up to the year 1892; and the Rev. A. B. Langlois, from about 1880 to 1898.

Riddell, Hale and Carpenter published the result of their observations in the form of a Catalogue of the Flora of Louisiana, names only, in the New Orleans Medical and Surgical Journal, 1859. This did not include grasses and sedges, though reference is made to a separate monograph on these two families, sent by Hale to the Smithsonian Institution, which paper seems to have disappeared. Their list contains about 1,800 names, but as, unfortunately, but fragments of the collection remain, it is impossible to verify many of the names, while even of the specimens which still exist, some have no labels other than "Louisiana;" others bear merely a number with reference to "Riddell Flora of Southwest Louisiana." It is probable, however, that in 1859 the flora of Louisiana was better known than it ever has been since that date.

Professor Featherman, professor of Botany in the State University at Baton Rouge, collected, mainly in the vicinity of Baton Rouge, and also prepared a manuscript of the Flora of Louisiana, which was sent to the Smithsonian Institution, but not published. His collection is also totally ruined. He does not seem to have known of the collection of Riddell, Hale and Carpenter, and his list contains no name not included in theirs, except grasses and sedges. He makes no reference to their work, and evidently imagined his catalogue was the first ever prepared.

Dr. Joor collected for many years in Texas and Louisiana, and also had prepared a manuscript of the Flora of East Texas and Louisiana. This manuscript was lost and no one knows what became of it. The plants he collected in Louisiana, not very many, were bought by Dr. Trelease of St. Louis, by whom a list was kindly sent to the writer some years ago.

Rev. A. B. Langlois published a catalogue in 1887 of the Phanerogams and Cryptogams collected for eight years, mainly

in the vicinity of Plaquemine, comprising about 1,200 Phanerogams and 1,000 Cryptogams. This collection was considerably added to by him in succeeding years, and is now at the Catholic University of Washington. This is probably the only collection of any size (outside of the writer's) which still exist of the Flora of Louisiana, and this only professes to cover a small portion of the State.

The present writer has united into one catalogue the name of every plant that any one of these older botanists has reported, and when reference is made to a plant in the accompanying list as first record from Louisiana, it means that it has not been reported by any of his predecessors, nor credited to Louisiana in any publication so far as he knows. It will be at once evident to any who glances down this list that Cameron Parish must have been overlooked entirely, and when we take further into consideration the fact that most of the results of bygone explorations have been lost, it seems that the writer is justified in his statement that Louisiana is to-day almost unknown botanically, whatever it may have been fifty years ago.

The Gulf Biologie Station is situated at the mouth of the Cameron river, two or three hundred feet from the beach, on one of the series of ridges which run parallel to the sea, traversing the salt marsh by which it is surrounded on every side. This salt marsh runs back for many miles, and with the exception of the succession of ridges which are six to eight feet higher, and which occur at intervals of every two or three hundred yards, the whole country is about at sea level. The region is practically treeless, with the exception of some thickets of *Bumelia lanuginosa* *Xanthoxylon Clava-Herculis*, and a few stunted specimens of Hackberry on the ridges. These show in a marked degree the effect of the breezes from the Gulf, as many of them have the upper portion growing almost at right angles to the lower, in a direction away from the sea. A certain amount of the marsh is cultivated, and the soil is said to be extremely fertile, producing without fertilization one, or even two bales of cotton to the acre.

Speaking roughly, the vegetation in the neighborhood of the station may be divided into five groups. First are the true halophytic salt water loving plants growing in the wet sands. Of this

group, the following, which are the most conspicuous, may be taken as typical:

- Batis maritima.*
- Salicornia ambigua.*
- Ipomoea pes-caprae.*
- Sesuvium portulacastrum.*
- Suaeda linearis.*
- Cakile maritima geniculata.*
- Heliotropium curassavicum.*

Second, there are the plants of the dry drifting sands, just outside the tide line, *psammophytes*. Of this group the following may be mentioned:

- Distichlis maritima.*
- Salsola Kali.*
- Euphorbia polygonifolia.*
- Cenchrus tribuloides.*
- Erigeron repens.*
- Heterotheca subaxillaris.*
- Oenothera humifusa.*

Third, the plants of the salt marshes, of which the following are representative:

- Spartina junciformis.*
- Spartina patens.*
- Spartina polytachya.*
- Lycium Carolinianum.*
- Lippia lanceolata.*
- Aster spinosus.*
- Tissa marina.*
- Atriplex arenaria.*

Fourth, the plants that occur along the high ridges, of which the following may be mentioned:

- Bumelia lanuginosa.*
- Xanthoxylum Clava-Herculis.*
- Acacia Farnesiana.*
- Crataegus species.*
- Vitis cinerea.*
- Eragrostis hypnoides.*

Fifth, those plants that have followed in the wake of cultivation, usually considered as weeds. Of these are:

- Panicum sanguinale.*
Lepidium Virginicum.
Sida spinosa.
Rumex verticillatus.
Amarantus albidus.
Amarantus spinosus.

Special mention should be made of *Tamarix Gallica*, which flourishes both on the sandy beach and in situations on the jetties, where it is often more or less submerged in salt water, and has its lower branches encrusted with species of shells.

Very little can be said of the cryptogamous Flora. Two species of Algae were taken from the salt water pools along the jetties. Mosses were represented by seven species, all common in other parts of the State. Six lichens were collected along the beach front, and a few species of fungi, which have not yet been identified.

As it almost certain that many plants have been overlooked, it is hoped that students visiting the station, especially in the spring or late autumn, will communicate to the writer any plants they find, not included in this list, in order that they may be later added as a supplement.

The question of nomenclature has been very hard to decide. In the main, this list conforms to Heller's 1898 *Catalogue of North American Plants*. If the plant is described in Chapman's *Flora*, his name is also given. Names not included in Heller's *Catalogue*, or in Chapman, are taken from Small, or from whatever author the writer obtained the description.

CATALOGUE OF PLANTS COLLECTED.

PHANEROGAMS.

ALISMACEAE.

Echinodorus radicans (Nutt) Engel.

Common all over Louisiana in swampy places.

Sagittaria lancifolia L.

Common all over South Louisiana.

Sagittaria graminea Michx.

Collected by the author in St. Tammany, Tangipahoa, Calcasieu and Cameron.

Sagittaria platyphylla (Engelm) J. G. Smith.

First record from Louisiana. Distribution according to Small: "Missouri and Alabama to Texas."

POACEAE.

Aristida palustris Vasey.

Fairly common in wet pine barrens and prairie country of Louisiana.

Aristida stricta Michx.

The commonest species of Aristida. In dry soil everywhere.

Amphilophis exaristatus Nash.

First record from Louisiana. Previous known distribution according to Small, "Texas." Small remarks that it is found in dry soil. In the vicinity of the station it grows in swamp or water. Fairly common in Cameron, but not recorded from elsewhere in State.

Capriola dactylon (L.) Kuntze. Bermuda Grass. (*Cynodon dactylon* Pers.)

Abundant over the whole State. An invaluable pasture grass for summer.

Capriola dactylon var *maritimus* Nees.

The variety which is very distinct in appearance from the type is the commoner in the vicinity of Cameron. In the writer's opinion, it should be recognized as a distinct species.

Chaetochloa imberbis (Poir) Serib. *Scetaria laevigata* Chap. in part.

Occasional, along the sea beach.

Chaetochloa glauca (L.) Serib. *Setaria glauca* Beauv.

Common all over the State in cultivated soil.

Cenchrus tribuloides L. Sand Bur.

Unpleasantly common along the beach.

Chhloris petraea Sw. (*Eustachys petraea* [Sw.] Desv.)

All along the coast of Louisiana.

Diplachne fascicularis (Lam.) Beauv.

Occasional, along the coast.

Distichlis spicata (L.) Greene. *Distichlis maritima* Raff.

Very common along the beach.

Dactyloctenium Aegyptium (L.) Willd. (*Eluesine Aegyptia* Pers.)

Common in cultivated soil all over State.

Eatonia obtusata (Michx.) A. Gray.

Common in dry soil over the entire State.

Eatonia Pennsylvanica (D. C.) A. Gray.

Found occasionally in ground that has been cultivated in most parishes of south Louisiana.

Elymus Virginicus L.

In swamps near the beach. Found all over the State.

Eragrostis Purshii Schrad.

In cultivated ground everywhere.

Eragrostis hypnoides (L.) B. S. P. (*Eragrostis reptans* Nees.)

In wet places all over the State.

Eragrostis secundiflora Presl. (*E. oxylepis* Poir.)

Not before collected in Louisiana. Known distribution according to Small: "Missouri, Kansas, to Mississippi and Texas."

Eriochloa longifolia Vasey.

First record from Louisiana. Previous known distribution according to Small: "Southern peninsular Florida."

Occasional along the beach.

Eriochloa pumetata (L.) Hamilt.

First record from Louisiana. Previous known distribution according to Small: "Kansas to Texas." Very common along the sea beach.

Hordeum pusillum Nutt.

Found in waste places all over south Louisiana.

Leptochloa Nealleyi (Vasey.)

First record from Louisiana. Known distribution according to Small: "Central and Southern Texas." Along the coast in the vicinity of the station.

Leptochloa imbricata Thurb.

Collected by Prof. S. M. Tracy, determined by Piper. First record from Louisiana. This grass is not included in Small's Flora, but according to Beale "Grasses of North America," page 435, occurs in South California, Arizona and Mexico. Beale quotes Dr. Palmer that it is a good forage plant. It occurs occasionally along the sea coast in the vicinity of the station.

Panicum proliferum Lam.

Common all over the state in wet soil.

Panicum paspaloides Pers.

First record from Louisiana. Known distribution according to Small: "Florida and Texas." Common in shallow ponds and swamps near the station.

Panicum Helleri Nash.

Collected by Prof. S. M. Tracy. Plant not seen by the writer. Previous known distribution according to Small: "Stony wooded hillsides South Texas."

Panicum repens L.

Very abundant along the banks of the Cameron river near the mouth. First record from Louisiana. Previous known distribution according to Small: "Alabama, Mississippi and California."

Panicum sphaerocephalon Ell.

Occasionally along the dry ridges near the coast. The plant also occurs almost over the whole state in dry soil.

Panicum Orangense Ashe. Journ. Elisha Mitchell Sci. So.,

Of this species, which is not yet described in any of the manuals, Mrs. Chase, assistant in Grass Herbarium, Washington, writes: "We are not yet decided whether *P. Ciliosum* Nash be not the same species." Range in manuscript of monograph on *Panicum* in preparation is New Jersey to Florida, west to Tennessee and Louisiana.

Paspalum ciliatifolium Michx.

Small gives the range of this grass as "District of Columbia to Alabama and Mississippi." This should be extended to include Louisiana. Besides its occurrence at Cameron, it has been collected by the writer in most of the Florida parishes of Louisiana.

Paspalum dilatatum Poir.

A useful grass abundant over the whole State.

Paspalum plicatulum Michx.

Common all over Southern Louisiana.

Paspalum lividum Trin.

First record from Louisiana. Previous known range according to Small: "Texas, Mexico, South America." In wet places near the beach.

Paspalum compressum (Sw) Nees.

(*Paspalum platyeaulon* Poir.).

Common over the entire State.

Paspalum longipedunculatum Le Conte.

First record from Louisiana. Previous known distribution according to Small: "Georgia and Florida." It occurs along the high ridges near the sea.

Paspalum vaginatum Sw.

Abundant along the banks of the Cameron river near the mouth.

Paspalum Drummondii Vasey.

(*Dimorphostachys Drummondii* (Fourn) Vasey.)

First record from Louisiana. Previous known range according to Small: "Texas and Mexico." In shady places on high ridges near the sea.

Paspalum stramineum Nash.

First record from Louisiana. This plant seems to have taken a big leap in distribution, for according to Small, its previous known range is Nebraska, Kansas, and Indian Territory. It is fairly common on the ridges near the station.

Phalaris angusta Nus.

Very abundant all over Louisiana in wet soil.

Phragmites Phragmites (L.) Karst.

Occurs all over the State.

Poa annua L.

In cultivated soil all over the State.

Spartina junciformis Engelm and Gray.

Very abundant in the salt marshes.

Spartina polystachya (Miehx.) Ell.

Common all along the coast of Louisiana in salt marshes.

Spartina stricta var. *glabra* Muhl.

Very abundant in the salt marshes.

Spartina patens (Ait.) Muhl.

Also very abundant in the salt marshes.

Sporobolus Indicus (L.) R. Br.

In waste places everywhere.

Sporobolus Virginicus (L.) Kunth.

Along the banks of the Cameron river near the mouth.

Stenotaphrum secundatum (Walt.) Kuntze.

Not common in Cameron, but very abundant on the edges of swamps near New Orleans.

Syntherisma sanguinalis (L.) Dulac.

Common everywhere in cultivated ground.

Syntherisma linearis (Krok.) Nash.

Common over all the Florida parishes.

Zizania aquatica L.

A few clumps a few miles inland.

Zizaniopsis miliacea (Miehx.) D. & A.

Plentiful some distance from the coast, very abundant near New Orleans.

CYPERACEAE.

Carex tribuloides Wahl.

Carex species.

Cyperus virens Michx.

esculentus L.

articulatus L.

cylindricus (Ell) Chap.

strigosus L.

strigosus var. robustior Kunth.

erythrorhizus Muhl.

- echinatus* Britton.
rotundus L.
Kyllingia pumila Michx.
Eleocharis albida Torr.
tuberculosa R. Br.
aciularis R. Br.
nodulosa (Roth) Schult.
mutata (L.) R. & S.

- Scirpus namus* Spreng.
lacustris L.
Californicus (C. A. Meyer) Britton.
lineatus Michx.
cylindricus (Torr) Britton.
Fimbristylis castanea (Michx.) Vahl.
antumalis (L.) R. & S.
Dichromena colorata (L.) A. S. Hitch.

In marked contrast with the grasses which furnished many novelties, there was not a single sedge collected which has not been reported from many other portions of the state.

COMMELINACEAE.

- Commelina nudiflora* L.
erecta L.
virginica L.
-

PONTEDERIACEAE.

- Heteranthera limosa* (Sw) Willd.
Pontederia cordata L.
Piaropus crassipes (Mart) Britton.

This plant, which is the well known water hyacinth, occurs in deadly abundance all over Louisiana wherever there is a suitable water course. Small most unaccountably narrows its range to Florida and the tropics. Chapman makes no mention of it whatever, even in the 1897 edition.

JUNCACEAE.

Juncus bufonius L.

A few plants of this ubiquitous species were collected around the station building.

Juncus setosus (Coville) Small.

This species has been collected by the writer also, in the parishes of St. Tammany and Tangipahoa.

Juncus aristulatus Michx.

Juncus tenuis Willd.

This species was referred here with doubt by Prof. Coville, to whom it was submitted.

Juncus acuminatus Michx.

This species was reported by Langlois from Pointe-a-la-Hache and New Iberia, and has also been collected by the writer in St. Tammany, Tangipahoa, and Calcasieu parishes.

SMILACACEAE.

Smilax rotundifolia L.

Growing in the thickets of *Xanthoxylum*. Common over the whole State.

Smilax bona-nox L.

(*S. tamnoides* Gray.)

Same habitat as *S. rotundifolia*.

IRIDACEAE.

Iris versicolor L.

In swamps two or three miles back from beach. Very common in Louisiana.

LEMNACEAE.

Lemna minor L.

SALICACEAE.

Salix longifolia L.

(*S. Fluvialis* Nutt.)

Two or three stunted trees near the station. This is the common willow along the banks of the Mississippi.

ULMACEAE.

Celtis Mississipiensis Bose.

A few stunted trees on the ridges.

Celtis punila Pursh.

Occurring occasionally in ground that has been cultivated.

URTICACEAE.

Urtica dioica L.

(*chamaedryoides* Pursh.)

Parietaria Floridana Nutt.

POLYGONACEAE.

Polygonum opelousanum Ridd.

Collected by Prof. S. M. Tracy at Cameron. Collected by the writer in St. Tammany parish.

Polygonum punctatum Ell.

(*P. acre* H. B. K.) Over the whole State.

Polygonum hydropiperoides Michx.

(*P. mite* Pers.) All over the State.

Polygonum aviculare L.

Rare in Cameron parish. Common almost everywhere.

Polygonum convolvulus L.

Common over the State.

Rumex verticillatus L.

Growing in ditches.

Rumex crispus L.

This is the yellow dock or Rumex of the U. S. Pharmacopeia.

CHENOPIACEAE.

Chenopodium album L.

Very common in waste places everywhere, especially abundant on beach.

Chenopodium anthelminticum L.

This is the American wormseed of U. S. Pharmacopeia.

Chenopodium ambrosoides L.

Occasional as a weed in cultivated ground.

Atriplex hastata L.

Very common along the beach. Apparently recorded here for first time from Louisiana. Small gives the range as New Brunswick to South Carolina.

Atriplex arenaria Nutt.

Common along the sea beach.

Salicornia ambigua Michx.

Forming dense patches along the beach.

Dondia linearis (Ell) Millsp.

(*Suaeda linearis* (Ell) Moqu.)

First record of this species for Louisiana. Fairly common along the beach.

Salsola Kali L.

Common on the beach. Collected by Langlois near Pointe-a-la-Hache.

AMARANTACEAE.

Amarantus albidus L.

Common as a weed all over the State.

Amarantus spinosus L.

Common everywhere.

Amarantus lividus L.

A weed found occasionally all over the State. Apparently not included by Small in his Flora. Britton gives range as Eastern Massachusetts to Southern New York. Reported from Louisiana by Hale, Langlois, Joor, and the writer.

Acnida cannabina L.

In salt marshes along the Cameron river. Not uncommon near New Orleans.

NYCTAGINACEAE.

Boerhavia viscosa Lag. and Rodr.

First record from Louisiana. Very common on the edges of cultivated fields near the beach. Previous known range according to Small: "peninsular Florida and tropical America."

BATIDACEAE.

Batis maritima L.

One of the most abundant plants near the station, forming large patches on the beach. Found several miles inland.

PHYTOLACCACEAE.

Phytolacea decandra L.

Found all over the State.

Rivina laevis L.

Growing in shady places along the higher ridges. There seems to be some doubt whether or not this plant is specifically distinct from *R. humilis* L. The writer having seen both plants growing is convinced that they are quite distinct, differing in many particulars. See Small Fl. Appendix p. 1322.

AIZOACEAE.

Glinus lotoides Laeft.

First record from Louisiana. Very common along the beach. Previous known range according to Small, Indian Territory and Arkansas.

Trianthema Portulacastrum L.

(*T. monogyna* L.)

First record from Louisiana. Rare in Cameron, but very common in vicinity of New Orleans. Small gives range as Florida to Texas, Arizona, California, and Mexico.

Mollugo verticillata L.

Common all over the State.

Sesuvium maritimum (Walt) B. S. P.

Fairly common along the beach.

Sesuvium Portulacastrum L.

With the preceding. First record from Louisiana by Langlois. Small gives range as North Carolina to Florida.

Cypselea humifusa Turp.

First record from Louisiana. One clump found at Cameron. This plant is also an inhabitant of asphalt banquettes in New Orleans. Small gives its locality as "sandy pine lands in peninsular Florida and California."

PORFULACEAE.

Portulacca pilosa L.

Common along the beach. Very common in the streets of New Orleans in the cracks of asphalt banquettes.

Portulacca oleracea L.

Common on the beach. Very common, like the former, on the sides of gutters and asphalt banquettes.

AL SINACEAE.

Tissa marina (L.) Britton.

(*Spergularia salina* Presl.)

First record from Louisiana. Small gives range as New Brunswick to Florida and Texas.

MENISPERMACEAE.

Cocculus Carolinus (L.) D. C.

(*Cebratha Carolina* (L.) Britton.)

Common in thickets of *Xanthoxylum*, along the ridges near the beach. Also all over the State.

NYMPHAEACEAE.

Nymphaea advena Soland.

In the Cameron river. Also over the whole State.

CRUCIFERAE.

Lepidium Virginicum L.

As a weed in cultivated ground, common over the whole State.

Cakile Chapmanii Millsp.

Very common along the beach.

ROSACEAE.

Rubus trivialis Michx.

Crataegus.

Three species not yet determined.

LEGUMINOSEAE.

Acacia Farnesiana (L.) Willd.

A few shrubs in the vicinity of the station. Very common in the vicinity of New Orleans. Small gives range as "Southern Texas and Mexico, also naturalized in Florida."

Neptunia lutea (Leaven) Benth.

Fairly common near the beach and in the prairies of Calcasieu.

Trifolium Carolinianum Michx.

Occasionally in the drier places along the coast. Found over the State.

Trifolium repens L.

In cultivated ground over the State.

LEGUMINOSEAE.

Daubentonia longifolia (Cav.) D. C.

Very common round Lake Charles and extending down the river Cameron almost to the mouth. One of the commonest weeds around New Orleans, where in places it covers many acres of partially drained swamp. Small gives range as "Florida to Texas and Mexico." Should be extended to include Alabama, Mississippi and Louisiana.

Sesban macrocarpa Muhl.

Common over the whole State.

Glottidium vesicarium (Jacq.) Desv.

Very common around Lake Charles. A few plants near the station. Small describes foliage as "glabrous." In all the specimens the writer has seen, foliage is silky.

Lespidea striata Hook & Arn.

Common over whole State.

Vicia Londoviciana Nutt.

Over whole State.

Astragalus Nuttalianus var. *trichocarpus* T. & G.

First record from Louisiana. Rare along the beach. A Texas plant which according to Coulter (Botany of West Texas) is very common near Brazos Santiago.

Psoralea rhombifolia T. & G.

Common along the beach. First record from Louisiana. Previous known range according to Small: "Texas and adjacent Mexico."

Erythrina herbacea L.

Frequent over the State.

Centrosema Virginica Benth.

Over the State.

Strophostyles pauciflora (Benth) S. Wats.

(*Phaseolus pauciflorus*.)

In dry soil over the State.

Strophostyles helvola (L.) Ellis.

Common over the State. Especially abundant along Mississippi river.

Vigna repens (L.) Kuntze.

In the drifting sands along the beach. Also over the State.

Cassia chamaecrista L.

In swamps near the coast. Occurs over the State.

Cassia nietitans L.

Over the State.

Cassia obtusifolia L.

In cultivated soil over the State.

Gleiditschia triacanthos L.

A few trees on ridges near the beach. Common in the swamps over the State.

Mimosa strigillosa T. & G.

In dry soil over the State.

Alschnynomene Virginica (L.) B. S. P.

(*A. hispida*.)

Over State in ditches and wet places.

Indigofera anil L.

A few clumps near the station. According to Chapman, this plant was formerly cultivated in some of the Southern States for indigo.

Petalostemon emarginatus T. & G.

First record from Louisiana. Not rare along the beach.

Previous known range according to Small, "Texas."

OXALIDACEAE.

Oxalis corniculata L.

Over the State.

RUTACEAE.

Xanthoxylum Clava Hercules L.

Forming dense thickets on the higher ridges near the sea.

MELIACEAE.

Melia Azederach L.

A few trees here and there near the sea.

EUPHORBIACEAE.

Croton glandulosus L.

Not common at Cameron, but occurs commonly over the State.

Croton capitatus Michx.

Occasional near the beach. Very abundant in vicinity of New Orleans. Small gives range as New Jersey to Iowa, Georgia and Texas. Reported from Louisiana by Hale, Joor, Langlois.

Croton maritimus Walt.

(*C. punctatus* Jaeq.)

Very common along the sea beach.

Crotonopsis linearis Michx.

In cultivated ground where dry, over the State.

Euphorbia nutans Lag.

Over the whole State.

Euphorbia polygonifolia L.

Very abundant along the beach. Small gives range as New Hampshire to Florida. Our plant is not pale green as in Small's description, but conspicuously dark green.

Euphorbia prostrata Ait.

Occurs sparingly in Cameron. Very common near and in New Orleans.

Euphorbia maculata L.

Over whole State.

Euphorbia Arkansana (Engelm and Gray) Kl. and Gareke.

Fairly common on the ridges near the sea. Apparently first record from Louisiana. Small gives description as Kansas to Colorado, Alabama, and Mexico.

Euphorbia species.

This species, which is very abundant near the beach, is pronounced by Prof. J. B. S. Norton to be an undescribed species.

ANACARDIACEAE.

Rhus radicans L.

Common over the State.

SAPINDACEAE.

Cardiospermum Halicacabum L.

Common in cultivated fields over the State.

VITACEAE.

Vitis cinerea Engelm.

Common in thickets along the ridges near the sea.

Fruit ripens in July.

Cissus incisa Desmonl.

Common in Louisiana near the coast.

Cissus bipinnata (Michx.) Nutt.

(*Ampelopsis arborea* (L.) Rusby.)

Common all over the State.

MALVACEAE.

Hibiscus lasiocarpus Cav.

Abundant in the swamps near the station. Collected also in parishes of Calcasieu, Tangipahoa, and St. Tammany; Small gives range: "Illinois and Missouri to Georgia and Texas."

Hibiscus incanus Wenal.

Not collected near the station, but fairly common in the upper portion of the parish and in Calcasieu.

Modiola multifida Mvencl.

(*M. Caroliniana* (L.) G. Don.)

A common weed all over Louisiana.

Sida spinosa L.

A common weed in cultivated ground all over the State.

Sida acuta Burm.

Collected near the station in cultivated ground. Apparently not common.

Kosteletzkyia althaeifolia (Chap.) A. Gray.

Common in the swamps near the beach. Very abundant in low places in Calcasieu prairies. Found all over the State.

TAMARICACEAE.

Tamarix Gallica L.

This plant forms large clumps on the beach and seems to flourish in salt water, and grows freely on the jetties a few miles up the river. The lower branches frequently are covered with different kinds of shell fish.

CACTACEAE.

Opuntia opuntia (L.) Coul.

Forming extensive mats on the ridges near the sea.

LYTHRACEAE.

Ammannia coccinea Rottb.

In swamps near the beach. All over the State.

Ammannia Koehnei Britton.

(*A. latifolia* Chap.)

On edges of swamps over the State.

Lythrum lanceolatum Ell.

Common over the State.

ONAGRACEAE.

Jussiaea repens L.

In ditches and swamps over the State.

Ludwigia palustris L.

(*Isnardia palustris* L.)

Over the State.

Oenothera laciniata Hill.

In sand near the beach.

Oenothera humifusa Nutt.

Very common in the drifting sands.

Oenothera species not yet determined. Locality same as preceding.

Gaura Michauxii Spach.

In cultivated fields over the State.

PASSIFLORACEAE.

Passiflora incarnata L.

Passiflora lutea L.

Both these species are common over the State, especially in cultivated ground.

UMBELLIFERAE.

Hydrocotyle interrupta Muhl.

(*H. verticillata* Thunb.)

Hydrocotyle repanda Pers.

(*Centella Asiatica* (L.) Urban.)

Sanicula Marylandica L.

Daucus pusillus Michx.

Apium leptophyllum (D. C.) F. Muell.

Discopleura capillacea D. C.

(*Ptilimnium capillaceum* (Michx.) Hollick.)

Discopleura Nuttallii D. C.

(*Ptilimnium Nuttallii* D. C. Britton.)

Rare around the station, but one of the conspicuous plants on the Calcasieu prairies. Small gives range as: "Illinoian and Arkansas to Georgia and Texas."

LOGANEACEAE.

Polypteron procumbens L.

Common over the State.

GENTIANACEAE.

Sabbatia campestris Nutt.

On dry ridges near the beach. Small gives range as:
"Missouri and Arkansas to Texas."

Eustoma exaltatum (L.) Grisel.

Very common on the beach and extending some miles inland.

ASCLEPIADACEAE.

Asclepiodora viridis (Walt) A. Gray.

Near the beach. Found occasionally over the State.

Seutera maritima Decaisne.

(*S. palustris* (Pursh) Vail.)

Common in the sea marshes.

PRIMULACEAE.

Samolus floribundus H. B. K.

Common in swamps over the State.

SAPOTACEAE.

Bumelia lanuginosa (Michx.) Pers.

Forming thickets on the high ridges near the sea. Found occasionally in most of the Florida parishes.

CONVOLVULACEAE.

Ipomoea pes-caprae Sweet.

Forming long strands on the sandy beaches. Small gives range as Georgia and Florida to Texas.

Ipomoea acetosaefolia R. & S.

(*I. littoralis* (L.) Bois.)

Common on the sandy beach. Small gives range as South Carolina to Florida and Texas.

Ipomoea sagittata Cav.

(*I. speciosa* Walt.)

This species is very abundant in the open swamps near New Orleans. Occurs over the State.

Ipomoea commutata R. & S.

(*I. Caroliniana* Pursh.)

Over the State.

Ipomoea purpura Lam.

Naturalized in cultivated ground over the State.

Dichondra repens Forst.

(*D. Carolinensis* Michx.)

Over the whole State.

Cuscuta Gronovii Willd.

Very abundant on *Iva frutescens*. Found on asters and golden rods and other compositae and shrubs over the State.

Cuscuta indecora Choisy.

Growing on *Lycium Carolinianum* and other low shrubs and herbs along the beach. First record from Louisiana.

Cuscuta compacta Juss.

Not common. Growing in similar localities to previous species.

Cuscuta arvensis Beyrich.

On herbs and low shrubs. Also collected by Langlois, Hale, Joor.

BORRAGINACEAE.

Heliotropium Curassavicum L.

Very abundant along the beach.

Heliotropium Indicum L.

Common as a weed over the State. Supposed to be naturalized from India.

VERBENACEAE.

Verbena Xutha Lehm.

Very common all over the State, especially in vicinity of New Orleans.

Verbena Canadensis (L.) Britton.

Fairly common in the salt marshes. Small gives range as Illinois to Florida and Texas.

Verbena angustifolia Michx.

Over the State.

Lippia lanceolata Michx.

Common along the beach.

LABIATAE.

Monarda punctata L.

Very common over the whole State.

Scutellaria parvula Michx.

Not common, but collected by writer in St. Tammany and Tangipahoa.

Teucrium Canadense L.

Common as a weed in cultivated ground, especially in alluvial soil.

SOLANACEAE.

Solanum nigrum L.

Common over the State.

Solanum rostratum L.

Not Common. Collected by writer in New Orleans and near Lake Charles.

Solanum elaeagnifolium Cav.

Large patches near the lighthouse. Also collected in Calcasieu and St. Tammany. Small gives distribution as Missouri to Kansas, Texas and Arizona.

Physalis viscosa L.

Abundant on the sandy beach.

Physalis pendula Ryd.

In the higher ground around the station. First record from Louisiana. Small gives distribution as: "Illinois to Kansas and Texas."

Physalis angulata L.

In cultivated soil more or less over the State.
Nicotiana longiflora Cav.

A few plants near Leesburg. Also collected from Covington.

Lycium Carolinianum Michx.

One of the most prominent species in the neighborhood of the station, especially in the salt marshes near the beach.
Lycium Vulgare (Ait) Dunal.

A few plants apparently escaped from cultivation.
Common near Lake Charles in waste ground.

Datura Stramonium L.

Over the State in waste places.

SCROPHULARACEAE.

Gerardia heterophylla Nutt.

Common round the station. Also collected in the prairies of Calcasieu. Small gives range as, "Arkansas and Indian Territory to Texas."

Monnieria Monnieria (L.) Britton.

(*Herpestis monnieria* Kunth.)

Common over the State in wet places.

Herpestis nigrescens Benth.

Common over the State.

BIGNONIACEAE.

Tecoma radicans (L.) D. C.

Over the State.

PLANTAGINACEAE.

Plantago lanceolata L.

Common over the State in waste places.

Plantago elongata Pursh.

(*P. pusilla* Nutt.)

Occasionally in cultivated ground over the State. Common in St. Tammany and Tangipahoa.

RUBIACEAE.

Crusea triococca (T. & H.) Heller.

On the ridges near the beach. First record from Louisiana. Small gives range as: "Texas and adjacent Mexico." *Diodia Virginica* L.

Over the State.

Diodia teres L.

Also over the State, especially in poor soil.

Gallium hispidulum Miehx.

Found in most parts of the State.

CAPRIFOLIACAE.

Sambucus Canadensis L.

Over the State.

CAPRIFOLIACEAE.

Melothriapendula L.

Over the State.

COMPOSITAE.

This list of Compositae is probably very incomplete, as the writer was compelled to leave early in September, when many had hardly begun to put in an appearance.

Heterotheaca Lamarkii Cass. (*H. subaxillaris* (Lam) Britt and Rusby.)

Common in the sand along the beach, and also collected in the prairies of Calcasieu. Reported by Langlois from Plaquemines. The writer is strongly of the opinion that there are two species of *Heterotheaca* in Louisiana. One of them is found only on the beach, is prostrate, and has broadly oblong, clasping, serrate, thick leaves. The other is found mainly in the prairies and open land, not in the vicinity of the sea. It is upright, has much narrower, thinner leaves, very slightly serrate, and slightly clasping. None of the

species collected by the writer had basal leaves, so these could not be compared. Although the flower heads of both are very similar, the general aspect of the two is entirely different.

Isopappus rubiginosus var. *phylocephalus* Gray. (*Eriocarpum phylocephalum*.)

[D. C.] Greene.)

Apparently recorded here for the first time from Louisiana. Gray Synop. Flora given as range South Texas and South Florida. He says: "Without much doubt a state of *A. Rubiginosus*, but may hold distinct." Synop. Flora of North America, page 130. Small gives distribution sandy beaches of Texas and adjacent Mexico.

Aphanostephus skirrobasis (D. C.) Trelease.

Collected near the station by Professor S. M. Tracy.

Small gives range as Kansas to Texas, and in Florida.

Sonchus asper L.

Sonchus oleraceus L.

Both common weeds over the State.

Coreopsis cardaminifolia (D. C.) T. & G.

On the ridges near the sea. Reported from several localities by Riddell, Hale, and Carpenter. Small gives range as Texas and Kansas to Arizona.

Coreopsis Drummondii (D. Don) T. & G.

Collected by Professor S. M. Tracy. Also reported by Riddell, Hale, and Carpenter. Small gives range as "dry soil Texas." On the ridges near the beach.

Eclipta alba (L.) Haussk.

Over the State.

Xanthium strumarium L.

A troublesome weed over the State.

Ambrosia artemisiæfolia L.

Ambrosia trifida L.

Both common over the State.

Ambrosia psilostachya D. C.

Common near the beach. Not seen elsewhere in the State. Small gives range: "Northwest Territory to Illinois, Texas, Mexico, California."

Pluchea foetida (L.) B. S. P.

Occurs in swampy ground in most parts of the State.

Eupatorium serotinum Michx.

In low ground in most parts of the State.

Solidago radula Nutt.

Not common near the station, but plentiful in Calcasieu.

Though this was the only species of Solidago in bloom in September, no doubt several others appear later.

Erigeron repens A. Gray.

Common in the drifting sands along the beach. Not seen elsewhere.

Erigeron Canadensis L.

A common weed over the State, especially in worn out soil.

Erigeron Philadelphicus L.

Found over the State.

Aster spinosus Benth.

One of the most prominent and abundant species in the vicinity of the station. Often covering large areas to the exclusion of other species. Reported by Hale, Riddell, and Carpenter. Small gives range as: "Texas to Southern California and Mexico."

Aster tenuifelius L.

In the salt marshes near the station. Reported from various localities by Riddell, Hale and Carpenter.

Berrichia frutescens (L.) D. C.

A very conspicuous species on the sandy beach. Reported by Langlois from near Pointe-a-la-Hache.

Iva frutescens L.

One of the most abundant species on the edge of the beach and in the salt marshes. Very common also around Lake Pontchartrain.

Iva ciliata Willd.

Also very abundant. Common in most parts of the State near the coast.

Iva angustifolia Nutt.

Not so common as the other two, but known from several localities in the State.

Helenium tenuifolium Nutt.

Fortunately not common near the station. In many parts of the State a most pernicious weed, ruinous to pastures.

Verbesina Virginica L.

In swampy places over the State.

Pyrrhopappus Carolinianus D. C.

In cultivated ground over the State.

Gnaphalium purpureum L.

Over the State.

Krigia Dandelion Nutt.

Not very common, but distributed over the whole State.
Lepaehys peduncularis T. & G. (*Ratibida peduncularis* [T. & G.] Barnhart.)

Apparently first record from Louisiana. Abundant on the ridges near the station. Small gives range as "low grounds Texas."

Omitted.

Typha latifolia L.

Abundant in swamps over the State.

Desmanthus brachylobus (Willd) Benth.

Known from many localities in State. Common in vicinity of New Orleans.

CRYPTOGAMS.

FERNS.

Ferns were not represented in this region by a single species.

MOSSES.

The following mosses were collected, all of them common almost over the entire State:

Cryphæa glomerata B. S.

Cylindrothecium seductrix Sull.

Funaria hygrometria Sibth.

Thuidium gracile B. S.

Eaphidostigium microearpum C. Muel.

Weissia viridula Brid.

LICHENS.

The following species of lichens were collected mainly along the beach. They were determined for the writer by Mr. A. G. Merill, of Rockland, Maine:

Graphis scripta Ach.

Physcia stellaris (L.) var. *aipolia* Nyl.

Usnea florida (L.) Ach.

Ramilina sub fraxinea Nyl.

ALGAE.

Two species of Algae were collected, which both occur constantly associated together in the shallow pools on the jetties:

Enteromorpha compressa (L.) Grev.

Ectocarpus Mitchellæ Harvey.

Dr. Farlowe suggests that *Ectocarpus Mitchellæ* is identical with *Ectocarpus viridescens* Fleuret.

NOTES ON SOME NEW AND LITTLE KNOWN SPECIES
COLLECTED IN THE PRAIRIE REGION OF
SOUTHWEST LOUISANA.

In traveling westward from New Orleans on the Southern Pacific, the flora shows no marked changes as long as one is in the alluvial sugar regions, but soon after passing Lafayette one plunges almost abruptly into the prairie regions of Acadia and Calcasieu, where rice, instead of sugar and cotton, become the staple industry; and in this region the flora also changes in a marked degree. Until about the year 1884, the agriculture of this region was largely restricted to raising cattle and horses on the prairie ranges. But since that date, improved machinery for irrigation and the construction of canal systems have led to the rapid extension of rice cultivation, though large tracts of virgin prairie still remain. Although the climatic conditions are semi-tropical, the high temperature that is characteristic of localities so far south is much modified by cool winds from the Gulf. It is doubtful if any part of Louisiana has a cooler and more agreeable southern climate. The physical features of this area are not specially marked. The elevation ranges from about eighteen to twenty-five

feet, with occasional ridges of slightly higher elevation, down to sea level in the southernmost portion. The appearance of this region is, on the whole, that of a flat treeless prairie, though along the water courses it is wooded. Geologically, these prairies are a part of the coastal plain that extends from New England southward to the Gulf of Mexico, and along the southern border of the United States westward as far as the indenture made by the Gulf. A conspicuous feature of these prairies is the numerous sand mounds that have given this region the name of "pimpled prairies." These mounds exist more or less over the entire area and generally upon the more elevated parts of the area are found two to fifteen rods apart. In such localities they have an average height of perhaps two feet and a diameter of from fifteen to fifty feet. Everywhere these mounds appear as little domes. Occasionally, in the marsh areas, none of these mounds appear, but in other marsh areas they are more abundant. Furthermore, in certain marsh areas the mounds are both more abundant and larger than elsewhere. The origin of these mounds seems to be somewhat uncertain; from a botanical point of view, they show no distinction from the surrounding country. At present, rice is about the only crop grown in this region, though it is possible that with proper cultivation many other crops might give profitable returns. The few disjointed botanical notes which follow are to be considered as merely preliminary to a detailed study of this most interesting region. This the writer hopes to carry out shortly after another season of collecting spent in this locality.

Sphenoclea Zeylanica Gaertn.

(*Pongamium Indicum* [Juss] Lam.) On entering the rice region of Calcasieu, this plant immediately attracts the observer by its abundance. It covers many acres on the borders of the rice fields, almost to the exclusion of any other plant. Some few miles south of Lake Charles the writer drove seven miles along a country road completely choked up by it. It is not mentioned by Chapman, Small, or Wood, but it has been known to be abundant in Louisiana for over sixty years. It was first reported in 1840 by Dr. Hale. It is described in Gray's *Synoptical Flora of North America*, Volume II, Part I, Page 10, who says that it is a native of tropical Africa or Asia, naturalized in Louisiana.

His description is here appended: "Glabrous and somewhat succulent annual a foot or more high (this should be changed to two to five feet); leaves entire from obovate to lanceolate, tapering into a petiole; flowers closely sessile in a dense terminal pedunculate spike, small, each subtended by a short bract and a pair of bracklets; corolla white, a line or so wide, slightly exceeding the calyx. Range: Calcasieu and Cameron in the rice regions."

Nasturtium montanum Wall.

This plant, which has been observed by the writer for a number of years, is believed to be recorded here for the first time as occurring in North America. It is not included in any of the manuals nor check lists of North American plants. It was identified for the writer by Dr. B. L. Robinson of Harvard, who wrote that it corresponded in all details with specimens in their herbarium, of an East Indian and Chinese plant which had long passed as *Nasturtium montanum* Wall. It is very common in and around New Orleans, and can be found both blooming and fruiting every month of the year. Dr. W. Trelease, of the St. Louis Botanical Gardens, informed the writer that they had some unidentified specimens in their herbarium, sent from Covington by Dr. Joor. The writer has collected specimens from New Orleans, New Iberia, and Lake Charles. It is probably well naturalized in the southern part of Louisiana.

Polygala.

The genus *Polygala* is represented on the Calcasieu prairies by the following species:

Polygala Curtissii.

Polygala cruciata.

Polygala paludosa.

Polygala lutea.

Polygala nana.

Polygala cymosa.

Polygala grandiflora.

Polygala incarnata.

Polygala ramosa.

All of these except *Polygala Curtissa* have been found in many other portions of the State. *Polygala Curtissii* is reported

here for the first time from Louisiana. Previous known distribution according to Small, Pennsylvania to Kentucky, Georgia and Alabama. *Polygala cruciata* is very much more robust than in the eastern part of the State, and has an inflorescence two to four inches long instead of half an inch to an inch. It is probably the form *Polygala cruciata ramosior Nash.*

Panicum.

The following species of *Panicum* are recorded as additions to the flora of Louisiana:

Panicum albomarginatum.

Panicum uncinatum.

Panicum inflatum.

Panicum stipitatum.

Panicum albomarginatum Nash. has also been collected by the writer in St. Tammany parish, where it is one of the first grasses in the spring to bloom. Previous known distribution, according to Small, "peninsular Florida."

Panicum stipitatum Nash.

Fairly common in the open prairies of Lake Charles in damp places. Previous known distribution according to Small, "New Jersey to Pennsylvania to Kentucky, Tennessee and Georgia."

Panicum unciphyllum Trin.

Collected near Alexandria. Also collected near Covington. Rather rare. Previous known distribution, according to Small, "Maine and Quebec to British Columbia, Georgia, Indian Territory, and Arizona."

Panicum inflatum Scrib and Smith.

Occasional on the dry prairies. Previous known distribution, according to Small, "Mississippi."

Homalochrus hexandrus (Sw.) Kuntze.

This grass is exceedingly abundant in the wet places along the Southern Pacific railroad. It is one of the most conspicuous species of the region as seen from the train. The following other species of *Homalochrus* were also collected in this region:

Homalochrus Virginicus (Willd) Britton.

Homalochrus oryzoides (L.) Poll.

Homalochrus lenticularis (Michx) Scribn.

Rhyncospora Tracyi Britton.

This is another addition to the flora of Louisiana. It was common on the edges of ponds near Lake Charles. Previous known distribution, according to Small: "Pine land ponds, Georgia and Florida to Mississippi."

Eeocharis elongata Chap.

This plant, which is here recorded for the first time in Louisiana, was very abundant in ponds along the railroad near Lake Charles. It is also very abundant in the vicinity of Pearl River and Slidell. Previous known distribution, according to Small, Florida and Texas. The following species of *Eleocharis* were also abundant:

Eleocharis Mutata (L.) R. & S.

Eleocharis Nodulosa (Roth) Schult.

Eleocharis palustris (L.)

Florkia proserpinacoides Willd.

This speeies was collected in Louisiana by Dr. Joor in 1880. There were also several species in the Tulane herbarium labeled West Louisiana, with no date or further locality, collected by Hale. These specimens were collected by the writer near New Iberia. Small gives distribution as "Quebec to Oregon, Pennsylvania, Tennessee, and California."

Euphorbia pilulifera L.

A large patch of this species was noted near the railroad in the vicinity of Lake Charles. The same plant has also been collected by the writer near Slidell. Not otherwise known from Louisiana. Previous known distribution, acording to Small, "Florida to Texas, New Mexieo, and tropical America."

Houstonia Angustifolia Michx.

This species is another addition to the flora of Louisiana. It seems remarkable that it has been overlooked by previous explorers, as in the prairies around Lake Charles it is one of the most abundant species. Range: according to Small, "Illinois to Kansas, Florida, and Texas."

Oldenlandia Boscii (D. C.) Chap.

Not uncommon along the railroad between Lake Charles and Alexandria. Small's notes say that it grows in wet, sandy soil.

In Louisiana the writer has always found it in the driest situations possible.

The writer was collecting too early in the season for the majority of *Compositae*, and many, even of those that were collected, were too immature for positive identification, so that the following notes refer only to a few particularly interesting species.

Solidago.

The following species of *Solidago* were in bloom early in September, when the writer was collecting:

Solidago sempervirens.

Solidago stricta.

Solidago radula.

Solidago, three species, undetermined.

All these three species are known from many localities in the State. *Solidago sempervirens* is particularly common in the vicinity of New Orleans in empty and unfilled lots. It is perhaps, worth noting that the writer has collected it blooming in every month of the year. Almost every year it can be found blooming from the middle of March to December.

Gaillardia Species.

One species of *Gaillardia* was abundant in the prairies, especially on the somewhat more elevated ridges, and was sent by the writer to Dr. E. L. Greene. Of this plant, Dr. Greene wrote: "I have no doubt it is a good new species of *Gaillardia*, and I would name it *Gaillardia gauroides*, it is so like some *Guaras* I know in growth and foliage."

Rudbeckia.

The following species of *Rudbeckia* were collected on the prairies:

Rudbeckia fulgida Ait.

Rudbeckia grandiflora C. C. Gmelin.

Rudbeckia maxima Nutt.

Rudbeckia nitida Nutt.

Rudbeckia Floridana J. V. Moore var. *angustifolia*.

Rubbeckia alismaefolia T. G.

Rudbeckia glabra D. C.

All of these species, with the exception of *Floridana* var.

angustifolia, are included in the catalogue of the flora of the State by Hale, Riddell and Carpenter. *Grandiflora* and *maxima* were particularly conspicuous on the prairies, the former showing a preference for dry situations and the latter for moist. *Alismaefolia* was only found north of Lake Charles at a place called Kinder, about half way between Lakes Charles and Alexandria.

Coreopsis.

The following species of *Coreopsis* were noted: *Coreopsis stenophylla* Boynton, and what the writer took to be *Coreopsis tripteris*. But of the latter, Dr. Greene wrote that it is very small and delicate compared with the northern forms, and ought to be a new variety. This species was common about forty miles north of Lake Charles in dry soil.

Helianthus.

One species of *Helianthus* was very conspicuous, both by its abundance and striking appearance, which the writer took to be *Helianthus Mollis*, and so it was labeled by all the older collectors in Louisiana. But Dr. Greene says that this plant cannot possibly be the same as the northern *Helianthus Mollis*, and that they have nothing like it from the North or South. He says that this plant should be described as a new sub-species.

Lacinaria.

(*Liatis.*) Several species of *Lacinaria* were collected, of which the writer gives the names with uncertainty:

Lacinaria acidota.

" *Lacinaria spicata.*

Lacinaria squarrosa.

And a fourth species, which is entirely unlike any *Lacinaria* he has seen. While the individual heads and flowers are almost identical with those of the species which he takes to be *Lacinaria acidota*, the inflorescence is markedly racemose, with each head on a bracted pedicel two to six inches long. The writer sent a drawing of this species to Dr. E. L. Greene, but has as yet not heard from him.

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